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Author(s): Atencio, Julian James

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# **The Concept of Reliability and Trustworthiness**

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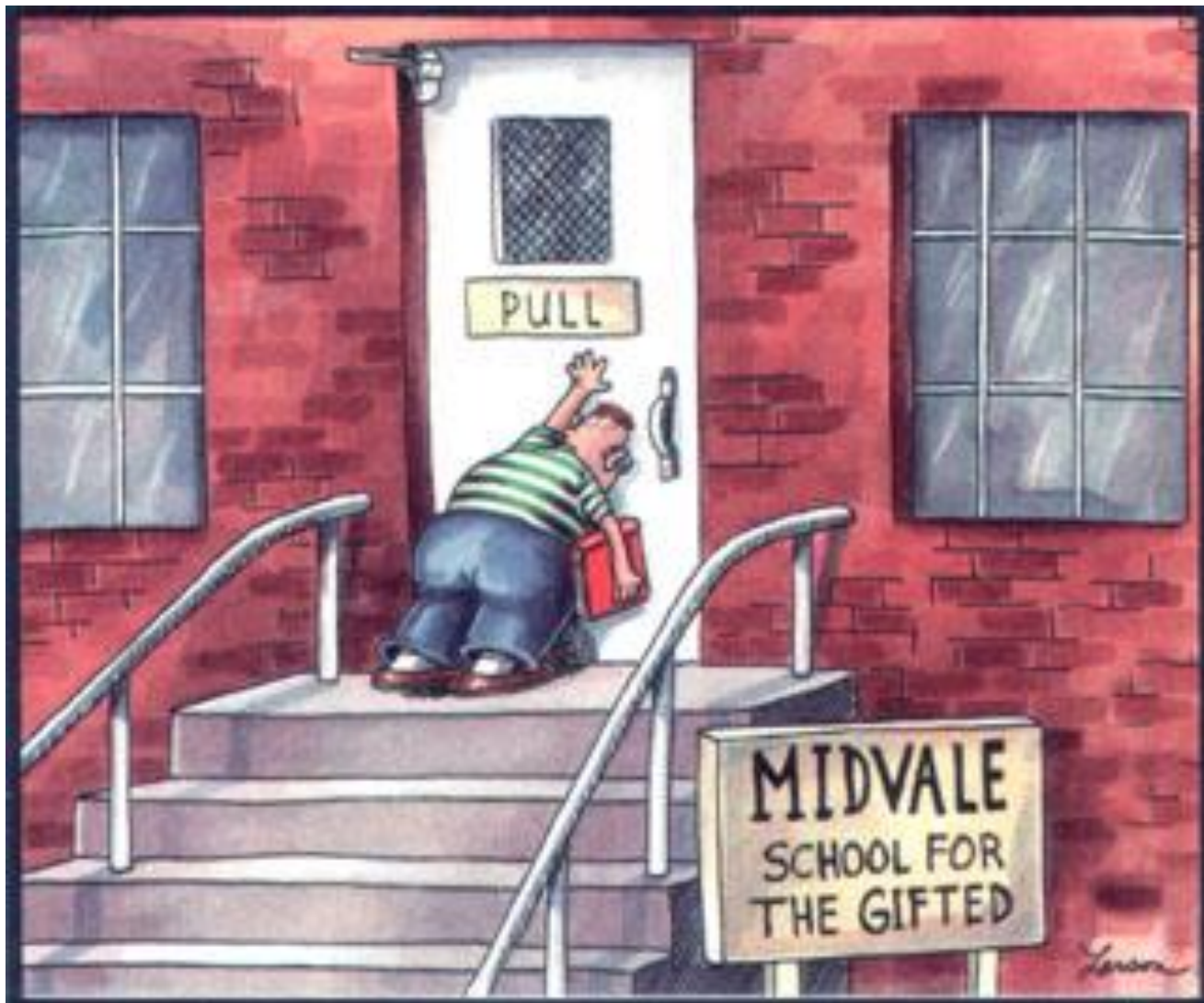
**Julian Atencio**  
**Los Alamos National Laboratory**



# Objectives

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- **To obtain an appreciation and understanding of human behavior as it relates to critical jobs.**
- **To understand the basics of the Department of Energy's Human Reliability Program.**
- **To understand the importance of monitoring and deterrence.**
- **To understand the effects of “right-sized” reaction.**

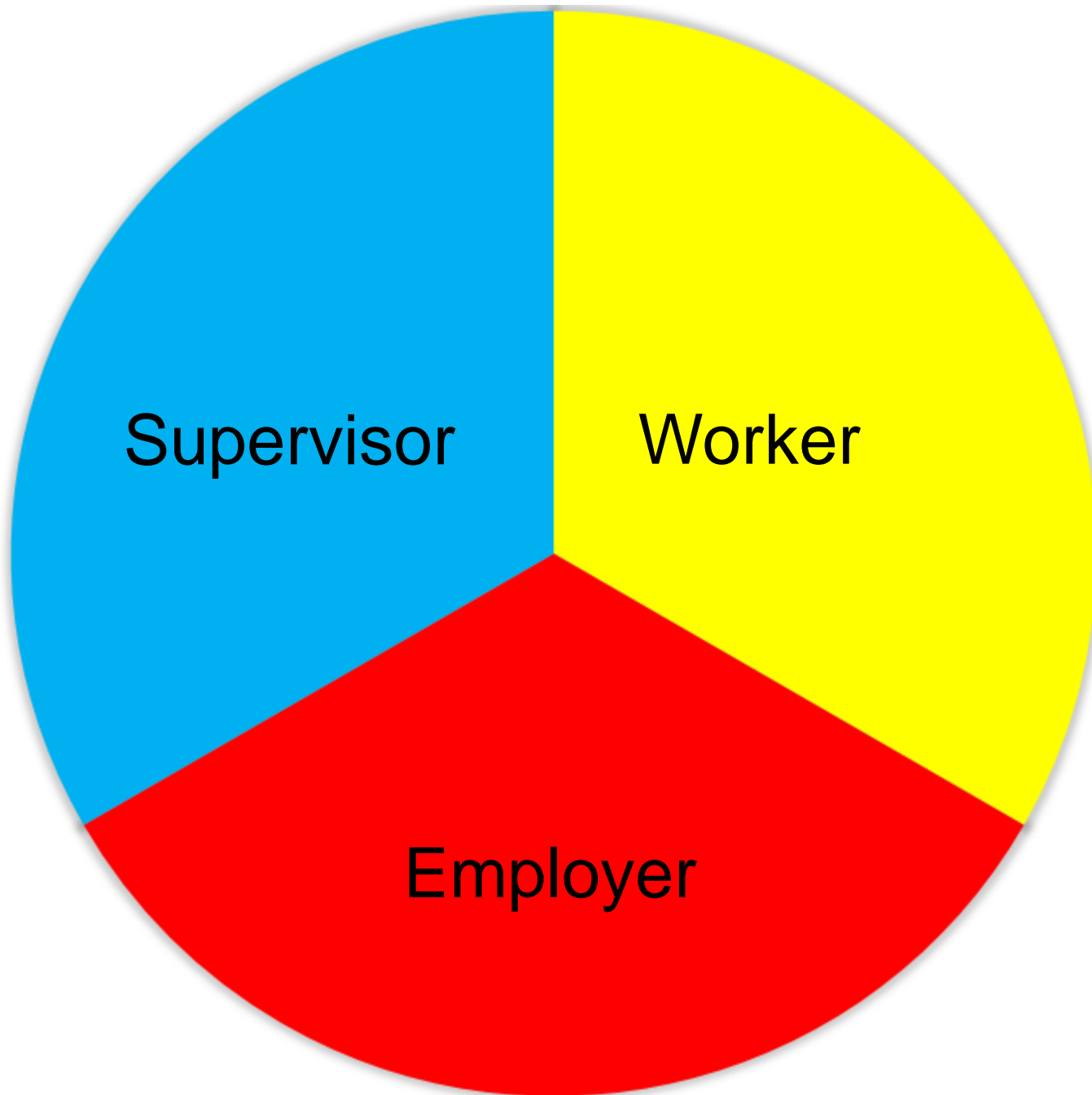




# What Is the Process?

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- **Evaluation and opinion**
  - Supervisor, coworkers, history, discipline
- **Medical evaluation**
  - Suitability, mental issues, medical issues
- **Compliance review**
  - Drug/alcohol testing, training, refresher
- **Security review**
  - Debt, criminal, aberrant behavior





# Relationship

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- It is very tempting to dive into the process that looks for ways to identify workers who are not trustworthy.
- This can create an aura of suspicion.
- Much greater value is realized when you design, build and maintain a system for filtering for trustworthiness and reliability.
- This mandates all parties come to the table and be accountable.
- The worker, supervisor and employer must all be involved in the overall path toward building a trustworthy and realizable work environment.
- These relationships determine culture.



# Unbiased Consistency

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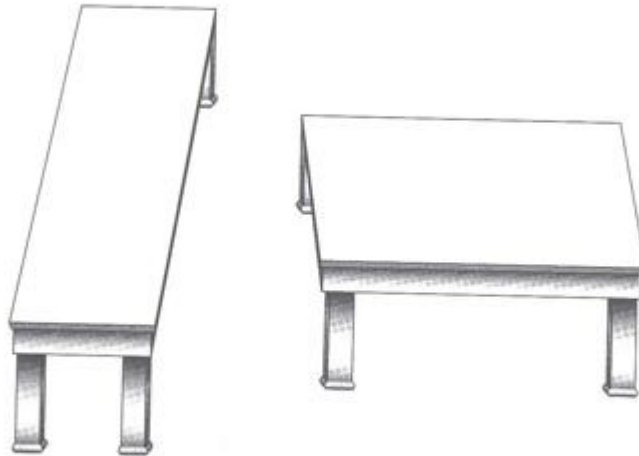
- No Favorites
- No Goggles
- No Advantages
- Treat everyone the same



# Recognizing the bias

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Have a look, if you will, at these two tables:



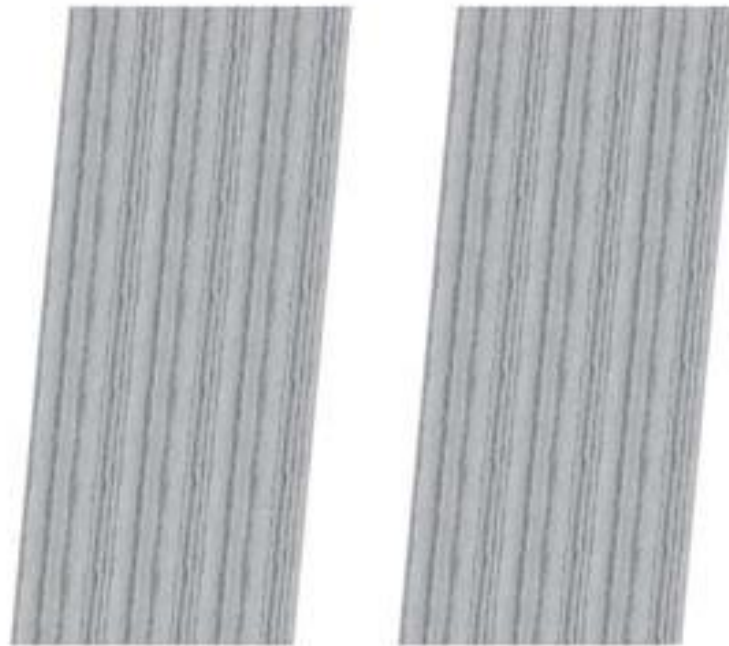
1.1.

Two tables (Adapted from Shepard [1990])



# Removing the bias

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# Workers and Supervisors

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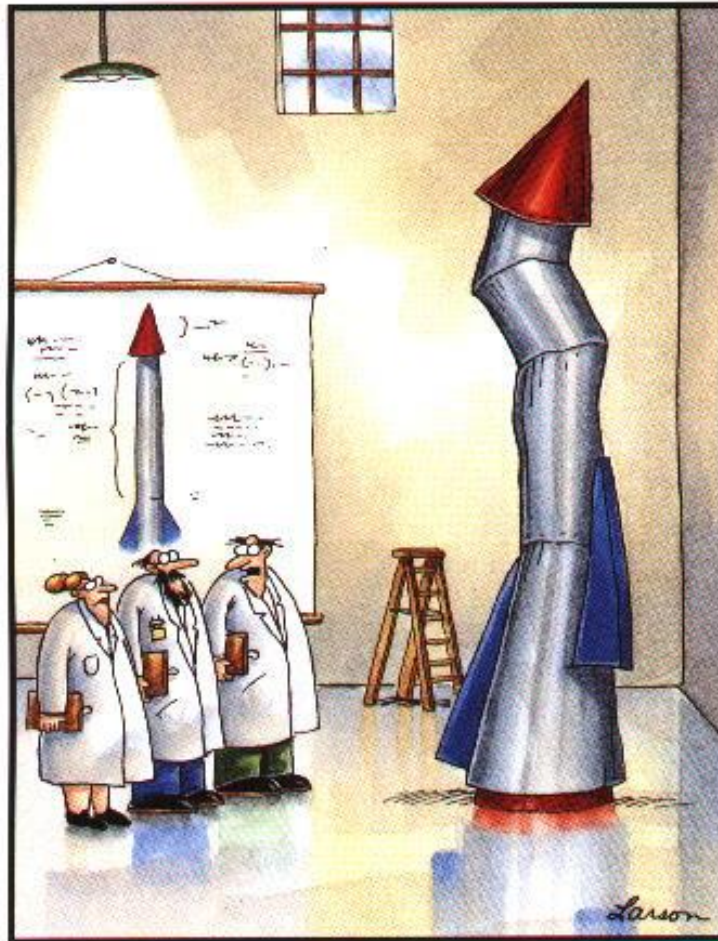
Employers depend on good relationships between workers and supervisors to accomplish the work. The ability to recognize issues and concerns in reliability programs requires information be evaluated by a neutral party, otherwise hidden bias may impact the end result and compromise the overall program.

# Aligning with other programs

- Issues often arise where the reliability of a worker is questioned. In many cases, the issue ends up with HRP but in reality has been problematic for many years.
- Trustworthiness programs are complimentary to other programs.
- No single program can identify unreliable workers.
- It takes a lot more than one program going through the steps to identify safety and security issues.



# It is, what it is...



"It's time we face reality, my friends. ...  
We're not exactly rocket scientists."

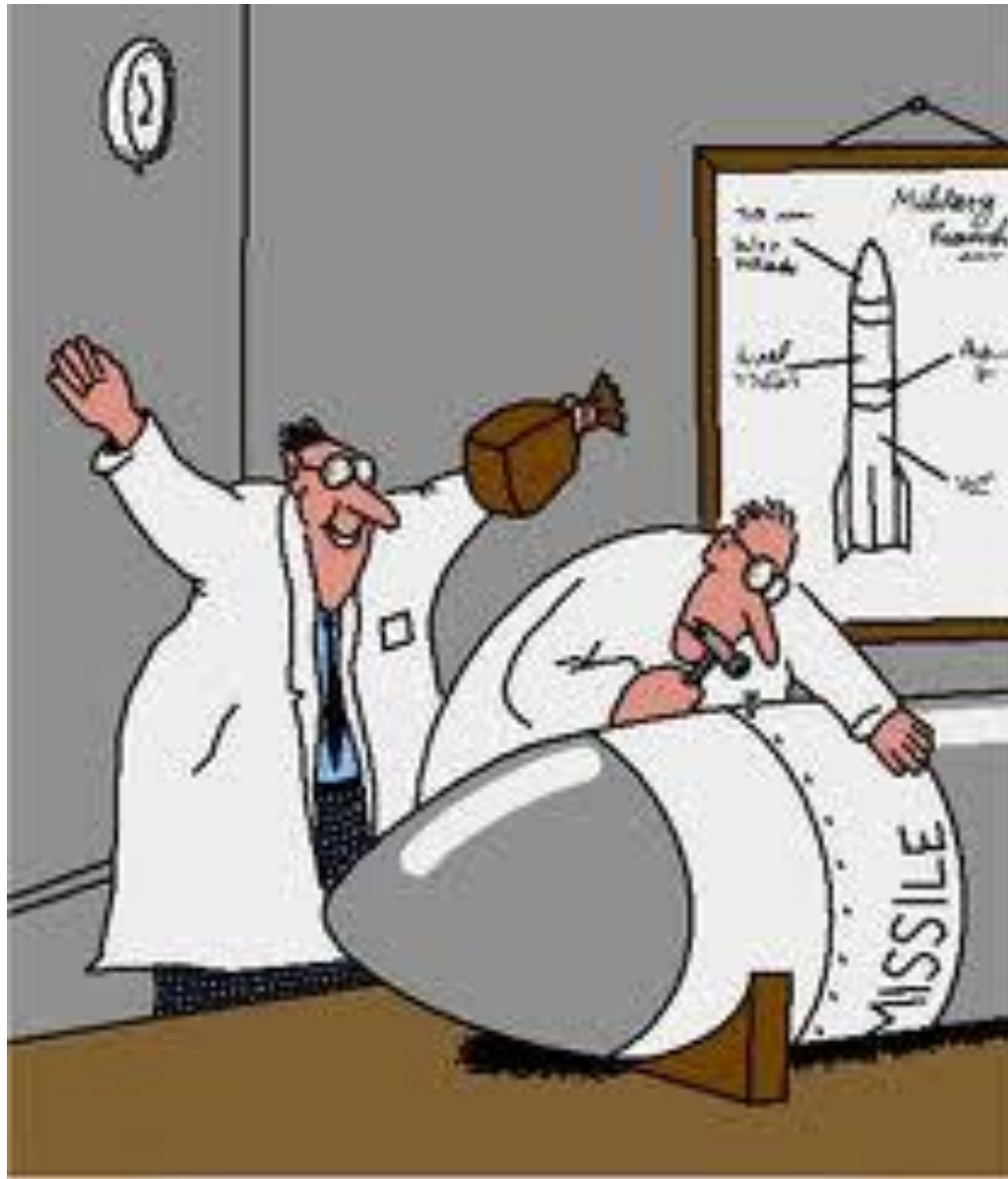


- **Science**
- **Computing**
- **Turbulence modeling**
- **Philosophy**
- **Mathematics**
- **Engineering**



**\*Filter**

**A device for separating**







# Malalignment

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- **Not every person is suited for every job.**
- **The task of selecting the right person for the right job is that of Human Resources.**
- **When an error in this tasking occurs, it becomes the responsibility of a reliability program to deal with the remnants.**





# Selection and Judgment

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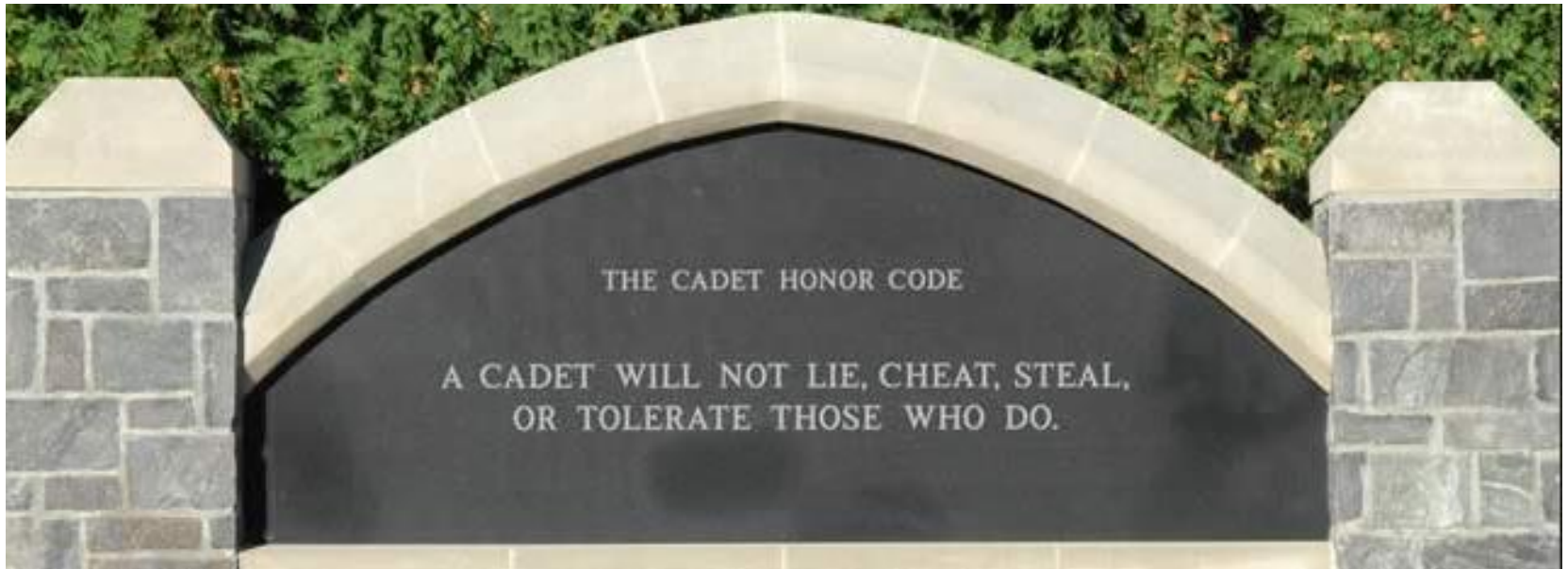
- **Filtering is where tough decisions are made.**
- **Most humans do not enjoy passing judgment on others in a negative way.**
- **The system must be willing to identify those individuals who don't meet the standard (this is where many programs fail).**
- **It is very difficult to select and sort humans.**
- **Nature selects every day for survivability.**
- **It is inherent in most humans to want to help instead of judge or filter.**



# What Does the Worker Need To Do?

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- **Be agreeable to the process**
- **Be open**
- **Be willing to provide information required to assess reliability**
- **Be willing to disclose pertinent information related to self and others**
- **Be honest with yourself and others**
- **Be able to report aberrant behavior of others**



Many workers have no problem adhering to the rules themselves but they have difficulty reporting the bad behavior of others.

# Fairness

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- **A key element is the confidence participants will have when they believe the system is fair and realistic.**
- **A worker is more likely to report a concern when they know the partial information they supply will only be one part of a broader evaluation.**
- **Workers often confuse actions by exclusionary programs as being discipline.**
- **Workers will be more receptive to the process if they know they are being treated equal and fair.**





# Reporting Requirements

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- 1. Psychological or physical disorders that impair performance of assigned duties**
- 2. Conduct that warrants referral for a criminal investigation or results in arrest or conviction**
- 3. Indications of deceitful or delinquent behavior**
- 4. Attempted or threatened destruction of property or life**
- 5. Suicidal tendencies or attempted suicide**
- 6. Use of illegal drugs or the abuse of legal drugs or other substances**
- 7. Alcohol use disorders**
- 8. Recurring financial irresponsibility**
- 9. Irresponsibility in performing assigned duties**
- 10. Inability to deal with stress, or the appearance of being under unusual stress**
- 11. Failure to comply with work directives, hostility or aggression toward fellow workers or authority, uncontrolled anger, violation of safety or security procedures, or repeated absenteeism**
- 12. Significant behavioral changes, moodiness, depression or other evidence of loss of emotional control**





# What Does the Company Need To Do?

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- It must have a system in place which evaluates reliability
- It must demand the process to evaluate reliability be fair and constantly scrutinized
- It must be willing to filter out workers who do not meet the criteria of reliability
- It must create an environment where trustworthiness is the standard for all workers
- It must be realistic about human behavior





What are we  
doing?

Are we looking  
or are we  
preventing?



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*Thoughts become Acts;  
Acts develop into Habits;  
Habits define Character;  
Your Character shapes your Destiny.*

● Nice  
City

+ Compare

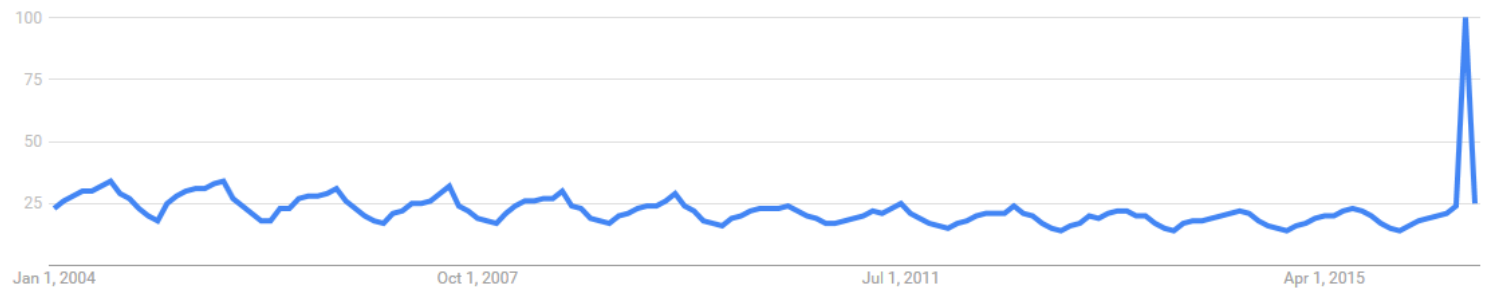
Worldwide ▼

2004 - present ▼

All categories ▼

Web Search ▼

Interest over time ?



● **deceive**  
Search term

+ Compare



Worldwide ▾ 2004 - present ▾ All categories ▾ Web Search ▾

Interest over time ?

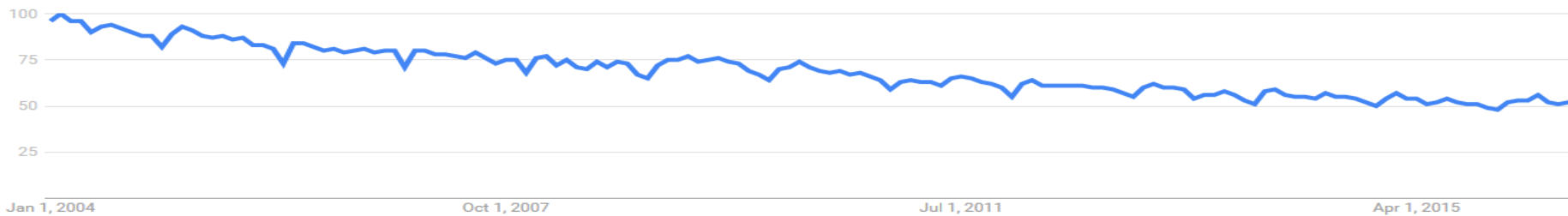


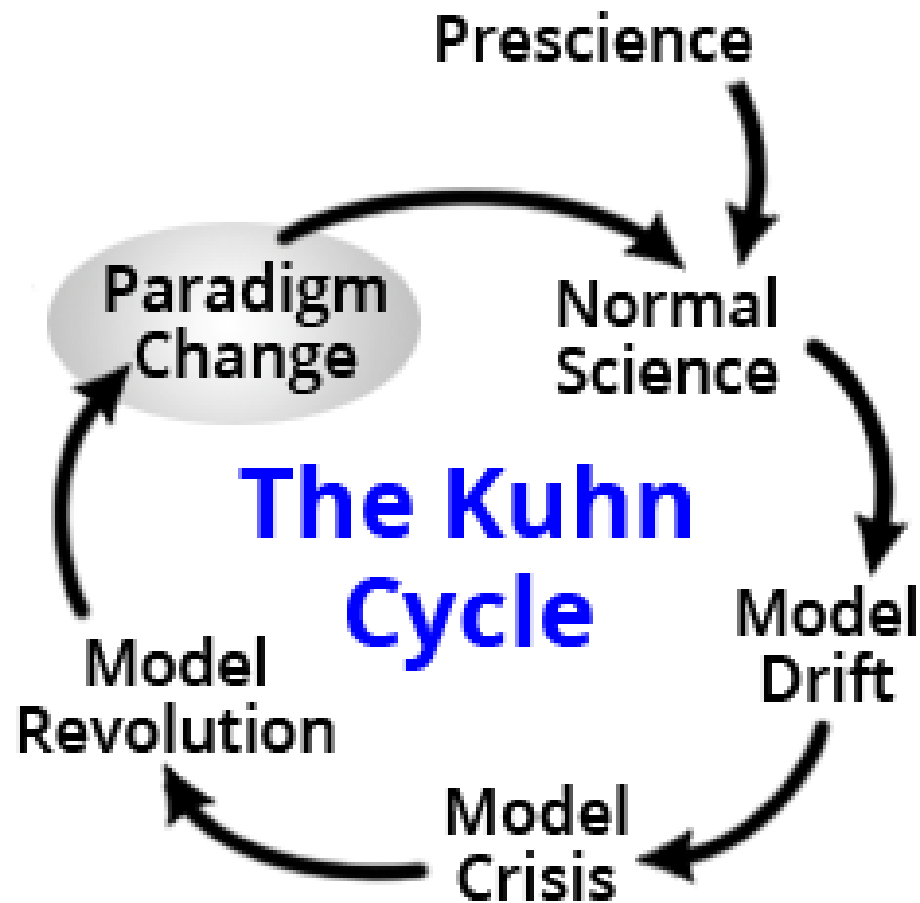
● **trust**  
Search term

+ Compare

Worldwide ▾ 2004 - present ▾ All categories ▾ Web Search ▾

Interest over time ?







## **What Effect Has Facebook Had on “Reliability?”**

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- **Peek into the soul**
- **Willingness to share information**
- **Everyone is doing it**
- **Low threshold for accepting risk**
- **Superficial checks and balance on personal risk**



EXCELLENCE





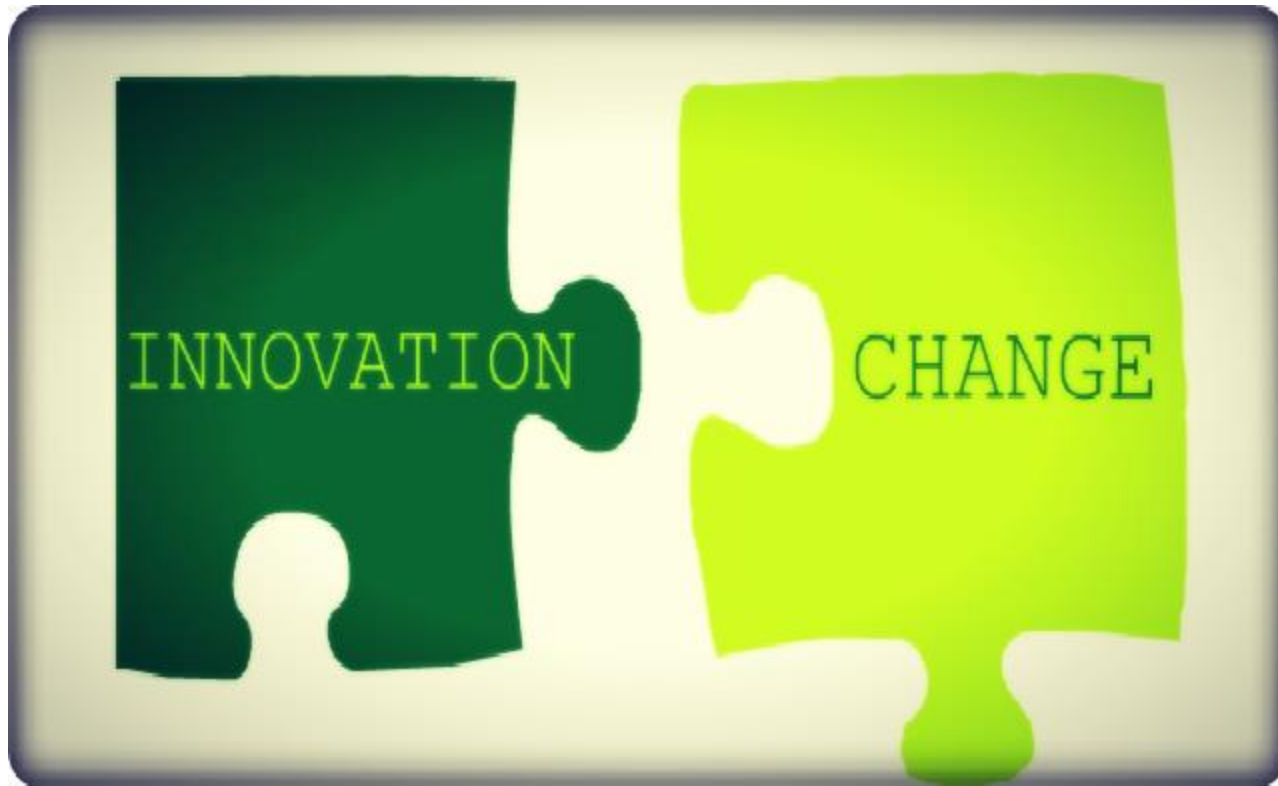




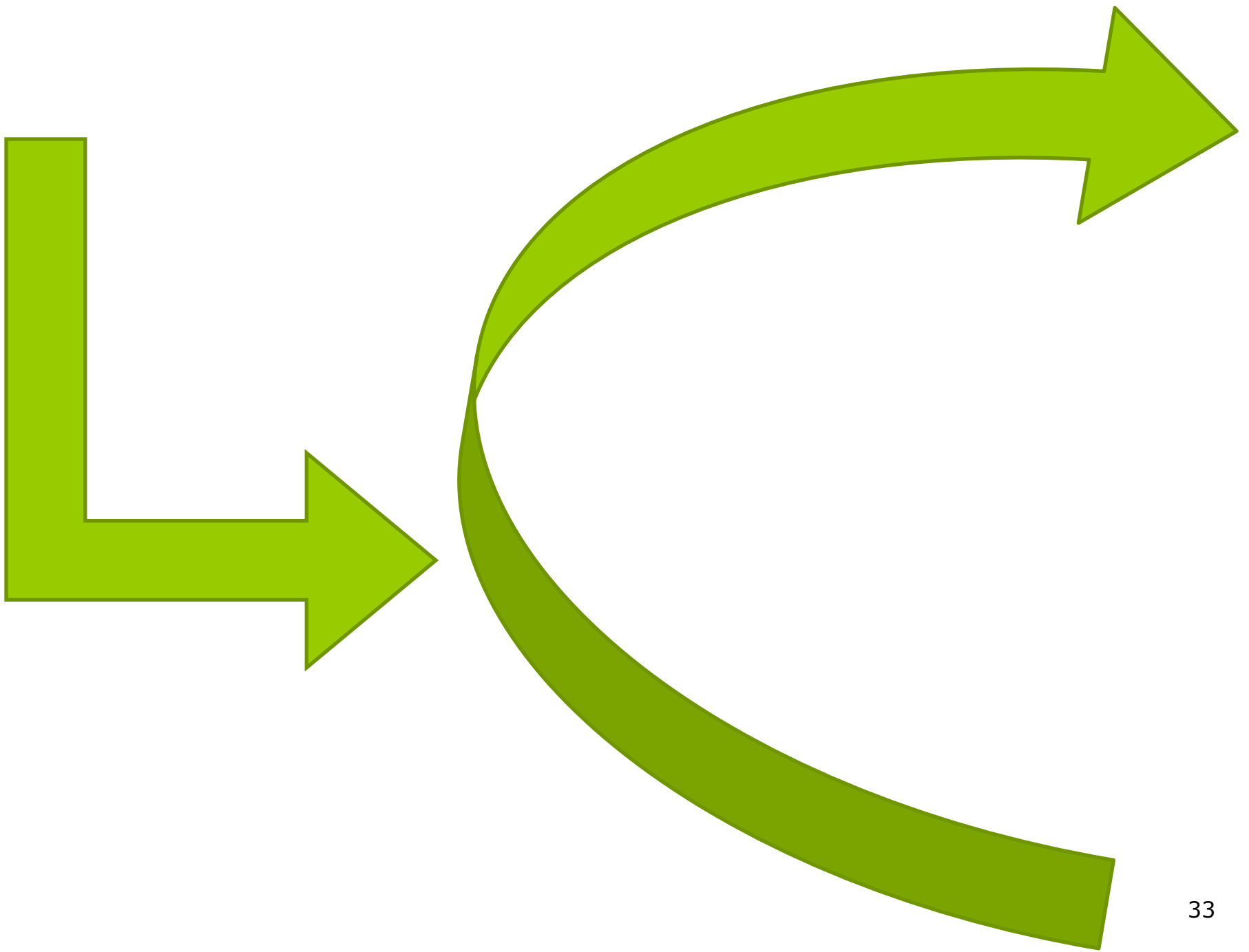
# Human Non-Perfection

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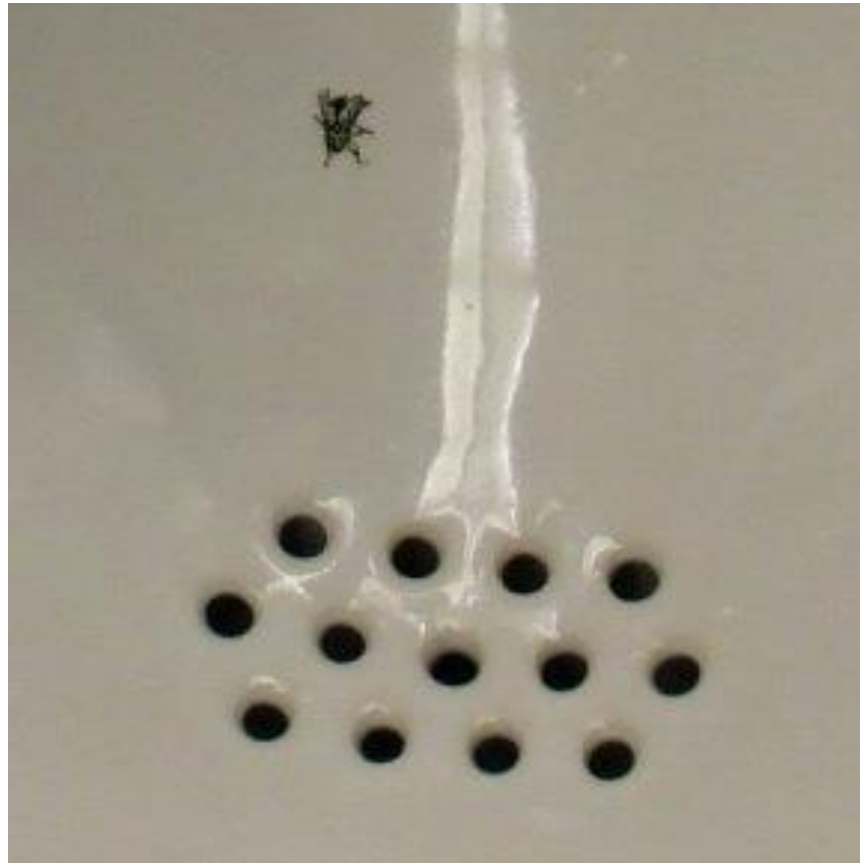
- **The program cannot have the expectation that every rule is going to fit every situation. If this were true, we could simply have robots conduct all of the HRP duties.**
- **We need living, breathing, thinking humans to make these critical decisions. These humans must be reliable and share certain attributes such as honesty, integrity and excellence in work ethic.**
- **A good program has the right tools to identify issues “under the surface” and make appropriate decisions about mitigating human non-perfection.**



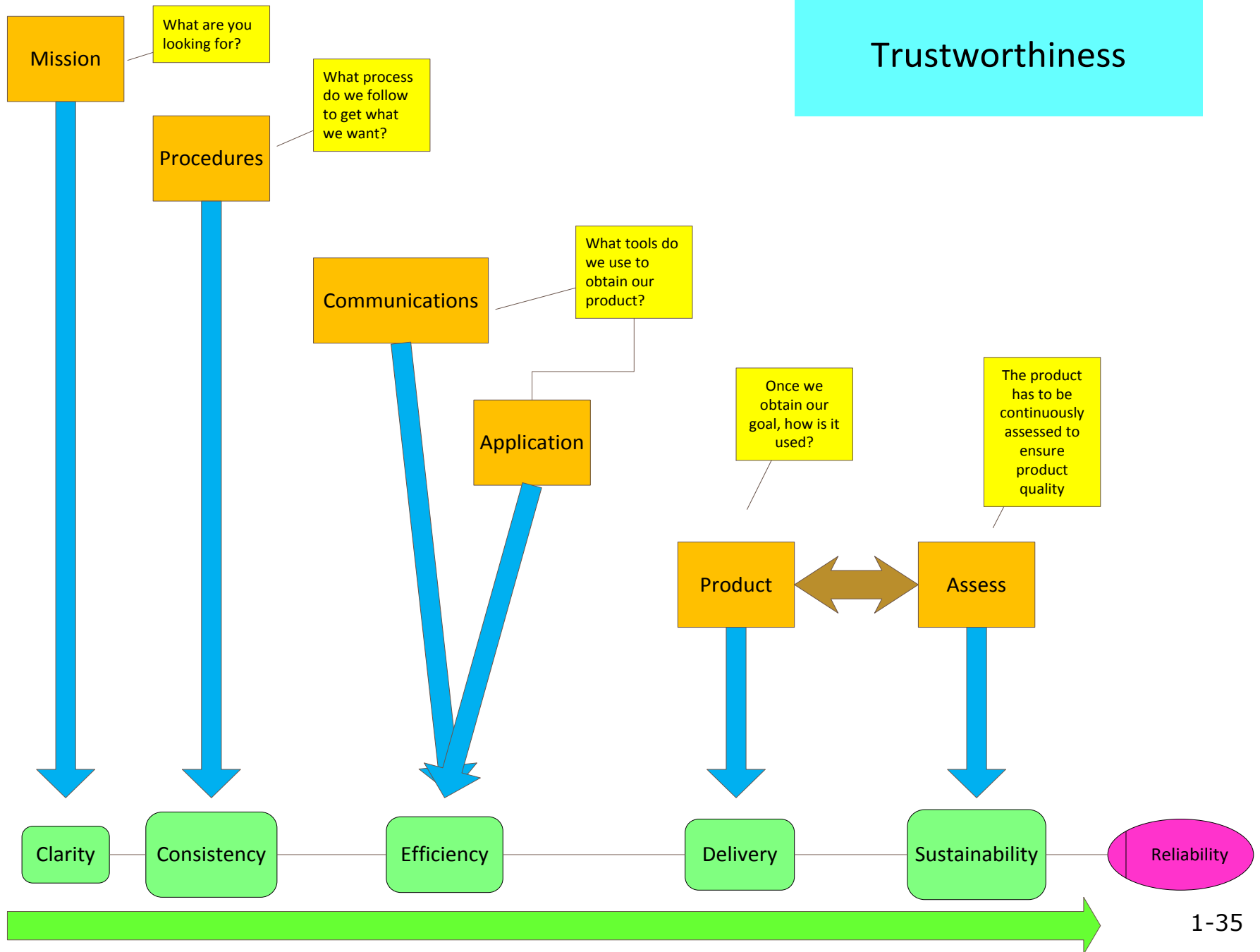
*"In time of change, learners inherit the earth; while the learned find themselves beautifully equipped to deal with a world that no longer exist."*



It doesn't take a lot to influence humans.  
A good system nudges workers in a  
positive direction.



# Trustworthiness

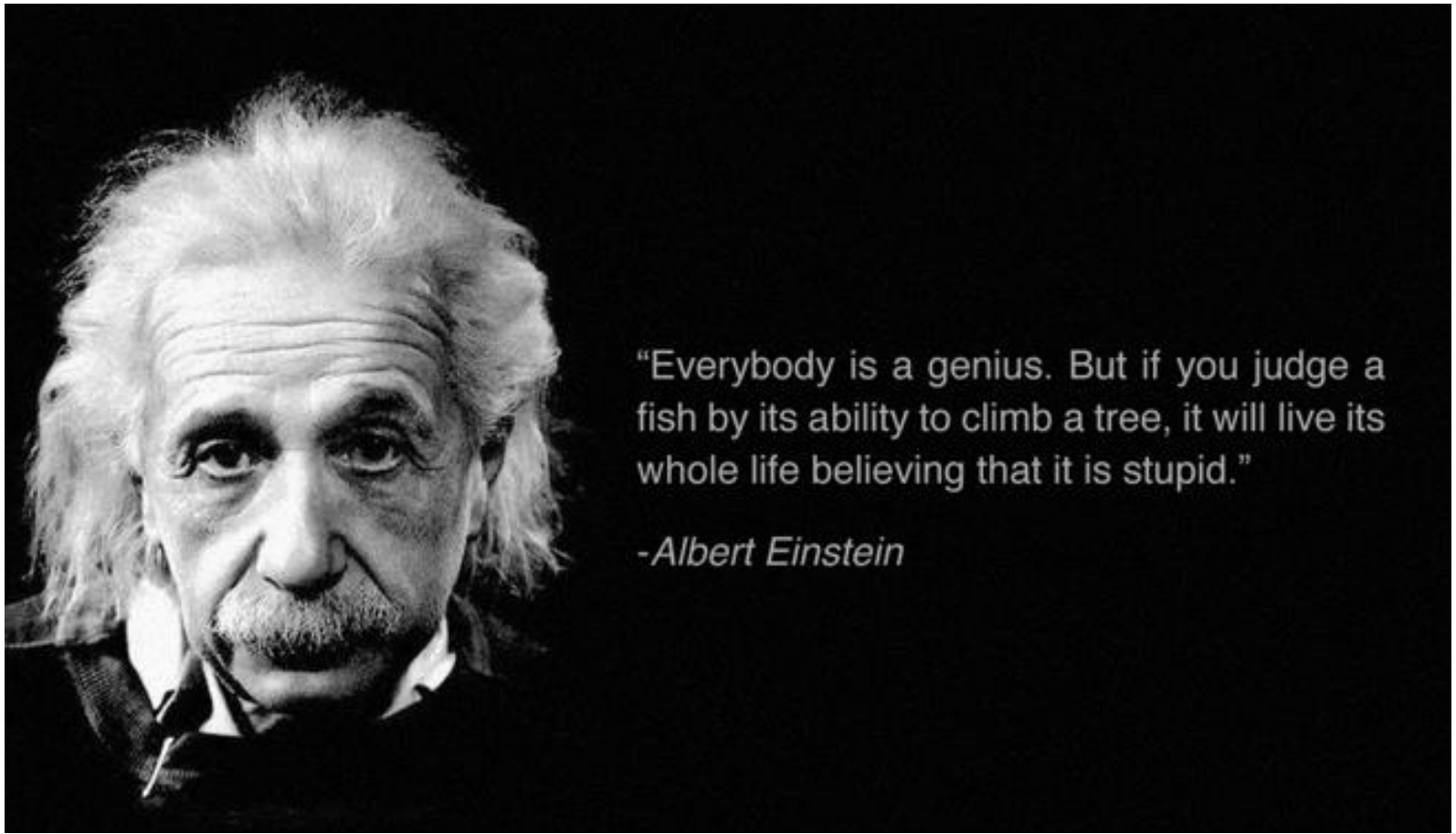




# **Filter, Monitor, Filter, Monitor.....**

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- **Follows rules**
- **Self-motivated**
- **Teachable**
- **Incorruptible**
- **Integrity**
- **Work ethic**
- **Admits fault**
- **Good Judgment**
- **Honest**
- **No impacting medical/psychological issues**
- **No drug use or alcohol misuse**



- ***If a man has good corn or wood, or boards, or pigs to sell, or can make better chairs or knives, crucibles or church organs, than anybody else, you will find a broad hard-beaten road to his house, though it be in the woods.***



**- Ralph Waldo Emerson**